REMARKS

Summary

Claims 1, 5-6, 8, 11, and 19-33 remain pending in the application. Claims 22-23 and 29-30 were amended. No new matter was added.

Rejection of Claims under 35 U.S.C. §101

Claims 1, 5-6, 8, 11, and 19-33 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. The Office Action states that the claims are neither tied to another statutory class (such as a particular apparatus) nor transform underlying subject matter (such as an article or materials) to a different state or thing. In addition, the Office Action states that the tie to the statutory class cannot be an extra-solution activity but is extra-solution activity an in the case of the instant claims. Applicant traverses the rejection.

Claim 1, for example, recites multiple limitations, each of which satisfies the requirements of the Supreme Court, CAFC and BPAI decisions. More specifically, claim 1 recites that one number on an RFID tag is obtained by radio means while another number is electronically read. Both of these are tied to a particular apparatus, e.g., a scanner or other electronic device capable of reading the number and translating it into a form in which it can be manipulated. Nor are these limitations merely representative of an extra-solution activity as both numbers must be obtained in order to manipulate them and eventually determine the authenticity of the item in question. Moreover, the use of a public-key cryptographic process to make a decision about the second number is tied to a particular apparatus, e.g., a processor capable of cryptographically manipulating the information containing the numbers (and memory containing the instructions for the specific encryption scheme being used) and deciding whether the second number is a particular signature and thus the item is authentic. This, too, is a core activity. Moreover, it is well known that such a cryptographic process at the time the application was filed would be performed by a computer having the necessary programming and further no indication that this process would or could be undertaken solely as a human endeavor.

The Office Action alludes to various Supreme Court and CAFC cases on this issue. The most recent Supreme Court case on this topic, *In Re Bilski*, has not yet been decided as of the submission of this response. This being the case, claim 1 adheres to the standards set forth in light of previous Supreme Court decisions, as well as CAFC and BPAI holdings. Turning to

some of the most recent CAFC and BPAI cases involving rejections under 35 U.S.C. §101, claim 1 is comparable to claims upheld by the courts as being patentable rather than the claims whose rejections were maintained. Similar to *Prometheus Laboratories, Inc. v. Mayo Collaborative Services*, (CAFC September 16, 2009), in which the question of whether administering a drug and then determining the drug level in the patent was held to be for the purpose of assessing the drugs' dosage during the course of treatment and thus central to the purpose of the claim, the various processes recited in claim 1 are also central to the purpose of the claim. Further, like the recent decision in *Ex Parte Morrison*, (BPAI January 7, 2010), claim 1 necessarily requires computer implementation, because without the computer the functions recited, e.g., using a public-key cryptographic process, the decision and determination steps cannot be performed. Moreover, like *Ex Parte Morrison*, determination of authenticity of the item recited in claim 1 is a real-world use of the claimed method. These decisions are to be contrasted with the decisions in *In Re Ferguson* (CAFC March 6, 2009), which involved upholding a rejection based on 35 U.S.C. §101 due to the claims reciting intangibles such as a paradigm and a method of marketing a product, and *Ex Parte Gutta* (BPAI 2009), in which the BPAI held that displaying a result which was the last step of a claim and had no relation to the other steps is an extra-solution activity that need not be performed by any particular structure (and may be accomplished simply by writing the result on a piece of paper).

In summary, each of the separate clauses in claim 1 satisfies the "machine or transformation" test of the CAFC decision in Bilski (presently the current law) and is not an extra-solution activity. The rejection of claim 1 based on 35 U.S.C. §101 is thus traversed.

Similarly, claim 6 recites programming an RFID tag and affixing the tag to a product/packaging among other limitations. It is readily apparent that an RFID tag is in a statutory class, as is the product/packaging, both of which are also transformed (e.g., the product/packaging is transformed from an unmarked to a marked state). This is in addition to the other limitations, which also satisfy the Bilski "machine or transformation" test. The rejection of claim 6 based on 35 U.S.C. §101 is thus traversed.

For similar reasons as above, the rejection of claims 11 and 21 based on 35 U.S.C. §101 is thus traversed.

Rejection of Claims under 35 U.S.C. § 103(a)

Claims 1, 5-6, 8, 11, and 19-33 (again remaining uncorrected and indicated as claims 1, 5-11 and 19-20) were rejected under 35 U.S.C. § 103(a) as being unpatentable over Halperin et al. (U.S. Patent 6,226,619; "Halperin") in view of Coppersmith et al., (U.S. Patent 6,069,955; "Coppersmith"). Applicant traverses the rejection.

Claim 1 recites a method for determining if an item is fraudulent. The method comprises, *inter alia*, that a public-key cryptographic process is used to decide whether a number printed on the item/packaging is a public-key signature of a number in an RFID tag associated with the item/packaging. The authenticity of the item is then determined as a result of this decision. In other words, if the printed number matches the public-key signature of the RFID number, the authenticity is confirmed. Thus, it is clear that the public-key cryptographic process operates on the RFID contents and the result (which is now signed) is compared with the printed number.

The Office Action disagrees with Applicant's characterization that Halperin and the method of claim 1 are opposite. To reiterate, it is clear that 1) the serial number and the signed serial numbers are different numbers, 2) in Halperin, the signed serial number of the label is on the RFID tag, and 3) as recited in claim 1, the serial number is on the RFID tag while the signed serial number is on the label. As the numbers associated with the different elements in Halperin are not only different but are, in fact, directly opposite, Applicant has argued that Halperin and claim 1 are opposite. Although, the Office Action disagrees with this, however, it provides no reasoning behind its disagreement or support for this disagreement.

The Office Action also indicates that it would have been obvious to switch the labeling in order to come up with the claimed invention. However, as Applicant has previously indicated, this is simply not the case.

One of the benefits of the method of claim 1 over conventional RFID tags (such as that disclosed in Halperin) as described in the instant application is that a conventional RFID tag contains the encrypted information. This information contains a large number of bits and thus is not desirable due to the limited memory in and cost of RFID tags. By separately providing the encrypted information on a label while providing the unencrypted information in the RFID tag, as recited in claim 1, these disadvantages can be overcome.

At the time of filing of Halperin (1998), RFIDs were known to have limited capacity and digital signatures were also known to be very large. If, as the Office Action contends, it would have been obvious to simply swap the numbers in the tag and label, then Halperin (presumably skilled in the art) would have known this and could have chosen a solution that did not require the digital signature in the RFID tag (or incorporated such a solution as an alternate embodiment). However, since there is no support in Halperin for putting the digital signature of the RFID data in a printed barcode format, it was apparently not obvious to Halperin, even though the deficiencies of the Halperin approach were even more significant in 1998 than they are now.

It is further apparent that Halperin was aware of Coppersmith's work as he makes particular reference to another of Coppersmith's applications as commonly assigned. Once again, despite an intimate familiarity with Coppersmith's work, Halperin does not describe an embodiment similar to the method of claim 1.

Moreover, even in the last several years the method recited in claim 1 has not been apparent. In one recent instance, a method to prevent forgery of paper money by including a barcode signature of the bill's serial number was presented in a paper at a well-respected security conference (Financial Crypto -2008). One problem noted with this approach is that a duplicated bill (where the barcode and serial number are duplicated) would remain valid and thus the use of RFIDs was suggested to eliminate the duplicability. The method described, however teaches a different approach than that recited in claim 1, which could also be used. The RFID-based solution presented places a private key in the tag that is used to sign challenges provided by the reader, which requires a much more powerful RFID tag (with a crypto-engine) than the minimum required RFID tag recited in claim 1 (e.g., using a data-only RFID tag). As indicated above, if it was obvious to use the method recited in claim 1, this method might have been described in the paper.

This evidence is sufficient to illustrate that it was not obvious to combine the teachings of Halperin and Coppersmith, or at best if so, the combination is different from the method recited in claim 1.

The Office Action also states that Coppersmith uses a public-key cryptographic process and contents of one label to cryptographically decide whether the second number is a public-key

signature of the first number. However, the numbers in the different printed labels of Coppersmith contain different signatures of the same serial number and only one label contains the unencrypted serial number. The information in each of the encrypted numbers is decrypted to provide numbers which are then compared to the separate unencrypted serial number to ensure that they are the same serial number. Thus, Coppersmith does not disclose that, of the two numbers printed on the labels, one number is the signed copy of the other number as one of the numbers contains both a signed and unsigned number while the other label contains a differently signed copy of only the unsigned number on the first label. Thus, Coppersmith does not disclose utilizing a public-key cryptographic process and contents of the RFID tag to cryptographically decide whether the second number is a public-key signature of the first number as recited in claim 1.

Applicant still maintains that there is no particular reason to incorporate the teachings of label encryption of Coppersmith in the RFID tag of Halperin. Even if a reason existed to combine Halperin and Coppersmith however, the combination would not result in the method of claim 1. Assume, *arguendo*, that Halperin and Coppersmith could be combined, and further that the result would not be four separate numbers: an RFID tag with a signed serial number and a visible label with the unsigned serial number as in Halperin and two more labels, one visible and one hidden, both containing differently signed versions of the serial number. Further modification would be needed to a) determine only two numbers should be used, b) reduce the combination of labels and RFID tags to one RFID tag and one label, c) decide to use an unsigned serial number and a signed serial number (in Halperin) rather than use differently signed serial numbers in addition to the unsigned number (in Coppersmith), and d) further alter the arrangement of Halperin by deciding specifically to use the unsigned serial number in the RFID tag rather than the signed serial number and, as in c), use only the signed serial number in the label instead of using a differently signed number from that in the label (as in Coppersmith).

Applicant submits that, if one of skill in art would be motivated to combine the two and further decide that the resulting combination should be an RFID tag and label combination, the combination of Haperin and Coppersmith would result at best in an RFID tag containing a serial number signed in with one public key and a label containing a serial number signed with another public key and an unsigned serial number. The combination would not result in an RFID tag

containing an unsigned serial number and a label containing a signed serial number, nor would it result in a label whose number is a signed copy of the number in the RFID tag.

For at least these reasons, none of the references anticipate or disclose the method recited in claim 1. Thus, claim 1 is patentable over the cited references.

For at least similar reasons, none of the references anticipate or disclose the method recited in claims 6, 11 or 21. Thus, claims 6, 11 or 21 are patentable over the cited references.

In addition, claims 6 and 21 recites further specifics about the RFID tag. For example, claim 6 recites that the RFID tag contains two numbers: a first number that is unalterable and essentially unique and a separate second number that is programmed into the RFID tag having the first number. Similarly, claim 21 recites that the two numbers are obtained by radio means. Nowhere does Halperin disclose that the RFID tag is has two separate numbers or that the RFID tag programmed first with an unalterable number and then later programmed with another number. In other words, it is apparent that the number in Halperin is a single signed number that was programmed at the time of encryption. Moreover, Halperin nowhere teaches that one of these numbers is alterable and the other is unalterable as recited in the claims. Furthermore, Halperin nowhere teaches that the combination of these unalterable and alterable numbers is then signed and affixed as recited in the claims.

Claims 5, 8, 19-20 and 22-33 are dependent on an allowable base claim and thus themselves are allowable without more. These claims are also independently allowable. For example, claim 22 recites that the RFID tag is an anti-forgery RFID tag. It is clear through the doctrine of claim differentiation, and as recognized by the Office Action, that an anti-forgery RFID tag is a specific embodiment of a RFID tag. An anti-forgery RFID tag is defined in the paragraph beginning on page 3, line 22 of the instant application. Per MPEP 2111, such a definition must be used when employing the broadest reasonable interpretation of this claim. Nowhere is the anti-forgery RFID tag of claim 22 disclosed in Halperin. Other claims further differentiate the unalterable number with the other number by determining whether the second number is an EPC of the item, such as in claim 26 or that the first number does not contain product information of the item whereas the second number contains product information of the

item. Claim 23 recites electronically determining whether a specific physical feature or a behavioral feature of the RFID tag matches that of an anti-forgery RFID tag. Nowhere does Halperin disclose this limitation – the paragraph cited by the Office Action describes a physical tamper detection mechanism of the product that has nothing to do with the RFID tag. The tamper proof seal of Halperin thus has nothing to do with matching either a physical or behavioral feature with that of an anti-forgery RFID tag, let alone doing so electronically.

Conclusion

Applicant respectfully requests that a timely Notice of Allowance be issued in this case and such action is earnestly solicited. Should the Examiner have any questions, comments, or suggestions, the Examiner is invited to contact the Applicant's attorney or agent at the telephone number indicated below. Applicant herein petitions for any extension of time necessary for the filing of this response. Please charge any fees that may be due for this filing to Deposit Account 502117, Motorola, Inc.

Respectfully submitted,

SEND CORRESPONDENCE TO:

Motorola, Inc.
1303 East Algonquin Road
IL01/3rd Floor
Schaumburg, IL 60196
Customer Number: 22917

By: /Anthony P. Curtis/

Anthony Curtis
Attorney of Record
Reg. No.: 46,193

Telephone:847-576-1974
Fax No.: 847-576-0721
Email: acurtis@motorola.com